

What is claimed is:

1. A biodegradable stent for treating vulnerable plaques of a patient comprising:
at least two zones; wherein a first supporting zone comprises at least a portion of continuous circumference of the stent, said supporting zone being made of a first biodegradable material; and
a second therapeutic zone made of a second biodegradable material.
2. The stent according to claim 1, wherein the biodegradation rate of said second biodegradable material is equal to or faster than the biodegradation rate of said first biodegradable material.
3. The stent according to claim 1, wherein at least one of the first and the second biodegradable material is a shape memory polymer.
4. The stent according to claim 1, wherein at least one of the first and the second biodegradable material further comprises a biological material, wherein said biological material is crosslinked with a crosslinking agent or with ultraviolet irradiation.
5. The stent according to claim 4, wherein said biological material is crosslinked with a crosslinking agent, wherein the crosslinking agent is genipin, its analog, derivatives, and combination thereof.
6. The stent according to claim 4, wherein said biological material is crosslinked with a crosslinking agent, wherein the crosslinking agent is selected from a group consisting of formaldehyde, glutaraldehyde, dialdehyde starch, glyceraldehydes, cyanamide, diimides, diisocyanates, dimethyl adipimidate, carbodiimide, epoxy compound, and mixture thereof.
7. The stent according to claim 4, wherein the biological material is selected from a group consisting of collagen, gelatin, elastin, chitosan, N, O, carboxymethyl chitosan, and mixture thereof.
8. The stent according to claim 1, wherein the biodegradable material in the therapeutic zone or the supporting zone further comprises a biological material, wherein the biological material is a solidifiable substrate, and wherein the biological material is solidifiable from a phase selected from a group consisting of solution, paste, gel, suspension, colloid, and plasma.

9. The stent according to claim 1, wherein the biodegradable material in the therapeutic zone or the supporting zone is made of a material selected from a group consisting of polylactic acid, polyglycolic acid, poly (D,L-lactide-co-glycolide), polycaprolactone, and co-polymers thereof.

10. The stent according to claim 1, wherein the biodegradable material in the therapeutic zone or the supporting zone is made of a material selected from a group consisting of polyhydroxy acids, polyalkanoates, polyanhydrides, polyphosphazenes, polyetheresters, polyesteramides, polyesters, and polyorthoesters.

11. The stent according to claim 1, wherein at least one of the first and the second biodegradable material comprises at least one bioactive agent.

12. The stent according to claim 11, wherein the at least one bioactive agent is selected from a group consisting of analgesics/antipyretics, antiasthmatics, antibiotics, antidepressants, antidiabetics, antifungal agents, antihypertensive agents, anti-inflammatories, antineoplastics, antianxiety agents, immunosuppressive agents, antimigraine agents, sedatives/hypnotics, antipsychotic agents, antimanic agents, antiarrhythmics, antiarthritic agents, antigout agents, anticoagulants, thrombolytic agents, antifibrinolytic agents, antiplatelet agents and antibacterial agents, antiviral agents, antimicrobials, and anti-infectives.

13. The stent according to claim 11, wherein the at least one bioactive agent is selected from a group consisting of actinomycin D, paclitaxel, vincristin, methotrexate, and angiopeptin, batimastat, halofuginone, sirolimus, tacrolimus, everolimus, ABT-578, tranilast, dexamethasone, and mycophenolic acid.

14. The stent according to claim 11, wherein the at least one bioactive agent is selected from a group consisting of lovastatin, thromboxane A₂ synthetase inhibitors, eicosapentanoic acid, ciprostone, trapidil, angiotensin converting enzyme inhibitors, aspirin, and heparin.

15. The stent according to claim 11, wherein the at least one bioactive agent is selected from a group consisting of allicin, ginseng extract, ginsenoside Rg1, flavone, ginkgo biloba extract, glycyrrhetic acid, and proanthocyanides.

16. The stent according to claim 11, wherein the at least one bioactive agent

comprises ApoA-I Milano or recombinant ApoA-I Milano/phospholipid complexes.

17. The stent according to claim 11, wherein the at least one bioactive agent comprises biological cells or endothelial progenitor cells.

18. The stent according to claim 11, wherein the at least one bioactive agent comprises lipostabil.

19. The stent according to claim 11, wherein the at least one bioactive agent comprises a growth factor, wherein the growth factor is selected from a group consisting of vascular endothelial growth factor, transforming growth factor-beta, insulin-like growth factor, platelet derived growth factor, fibroblast growth factor, and combination thereof.

20. A method for treating vulnerable plaques of a patient, comprising: providing a biodegradable stent comprising a first supporting zone made of a first biodegradable material, wherein said supporting zone comprises at least a portion of continuous circumference of the stent; and a second therapeutic zone made of a second biodegradable material, wherein at least one of the first and the second biodegradable material comprises at least one bioactive agent; delivering said biodegradable stent to said vulnerable plaques; orienting the therapeutic zone at about the luminal surface of the vulnerable plaque; and releasing said at least one bioactive agent for treating the vulnerable plaques.